

1. A method of cementing in a subterranean zone comprising:

preparing or providing a cement composition that comprises a hydraulic cement, sufficient water to form a slurry and a water soluble biodegradable fluid loss control additive comprising a mixture of a condensation product and hydroxyethylcellulose having a molar substitution in the range of from about 1 mole to about 2.5 moles of ethylene oxide;

placing the cement composition in the subterranean zone to be cemented; and

allowing the cement composition to set therein.

2. The method of claim 1 wherein the hydraulic cement in the cement composition is selected from the group consisting of Portland cements, slag cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

3. The method of claim 1 wherein the hydraulic cement in the cement composition is Portland cement.

4. The method of claim 1 wherein the water in the cement composition is selected from the group consisting of fresh water and salt water.

5. The method of claim 1 wherein the water is present in the cement composition in an amount in the range of from about 35% to about 65% by weight of cement therein.

6. The method of claim 1 wherein the condensation product is selected from the group consisting of the condensation product of water, gelatin, formaldehyde, sodium sulfite and acetone; the condensation product of water, casein, formaldehyde, sodium sulfite and acetone; the condensation product of casein, sodium sulfite, acetone, water, formaldehyde and sodium pyrosulfite; the condensation product of water, soy protein, formaldehyde, sodium sulfite and acetone; the condensation product of water, polyaspartic acid, acetaldehyde, sodium sulfite and pyrocatechol; the condensation product of dimethylsulfoxide, gelatin, glyoxal, urea and sodium sulfite; and the condensation product of water, polyaspartic acid, formaldehyde, sodium pyrosulfite, melamine and sodium hydroxide.

7. The method of claim 1 wherein the condensation product is the condensation product of water, gelatin, formaldehyde, sodium sulfite and acetone.

8. The method of claim 7 wherein the condensation product comprises 43.17% by weight water, 17.27% by weight gelatin, 25.18% by weight formaldehyde, 7.19% by weight sodium sulfite and 7.19% by weight acetone.

9. The method of claim 1 wherein the condensation product is the condensation product of water, casein, formaldehyde, sodium sulfite and acetone.

10. The method of claim 9 wherein the condensation product comprises 61.05% by weight water, 5.81% by weight casein, 23.26% by weight formaldehyde, 5.08% by weight sodium sulfite and 4.80% by weight acetone.

11. The method of claim 1 wherein the condensation product is the condensation product of casein, sodium sulfite, acetone, water, formaldehyde and sodium pyrosulfite.

12. The method of claim 11 wherein the condensation product comprises 26.90% by weight casein, 7.91% by weight sodium sulfite, 7.91% by weight acetone, 19.77% by weight water, 36.94% by weight formaldehyde and 0.57% by weight sodium pyrosulfite.

13. The method of claim 1 wherein the condensation product is the condensation product of water, soy protein, formaldehyde, sodium sulfite and acetone.

14. The method of claim 13 wherein the condensation product comprises 47.69% by weight water, 7.95% by weight soy protein, 8.27% by weight sodium sulfite, 7.79% by weight acetone, and 28.30% by weight formaldehyde.

15. The method of claim 1 wherein the condensation product is the condensation product of water, polyaspartic acid, acetaldehyde, sodium sulfite and pyrocatechol.

16. The method of claim 15 wherein the condensation product comprises 43.94% by weight water, 6.99% by weight polyaspartic acid, 17.96% by weight acetaldehyde, 34.80% by weight sodium sulfite and 36.00% by weight pyrocatechol.

17. The method of claim 1 wherein the condensation product is the condensation product of dimethylsulfoxide, gelatin, glyoxal, urea, and sodium sulfite.

18. The method of claim 17 wherein the condensation product comprises 57.75% by weight dimethylsulfoxide, 20.88% by weight gelatin, 3.62% by weight glyoxal, 8.61% by weight urea, and 17.40% by weight sodium sulfite.

19. The method of claim 1 wherein the condensation product is the condensation product of water, polyaspartic acid, formaldehyde, sodium pyrosulfite, melamine and sodium hydroxide.

20. The method of claim 19 wherein the condensation product comprises 39.55% by weight water, 9.88% by weight polyaspartic acid, 21.19% by weight formaldehyde, 7.06% by weight sodium pyrosulfite, 8.90% by weight melamine, and 13.42% by weight sodium hydroxide.

21. The method of claim 1 wherein the water soluble biodegradable fluid loss control additive comprises a condensation product in the range of from about 70% to about 90% by weight thereof and hydroxyethylcellulose having a molar substitution in the range of from about 1 mole to about 2.5 moles of ethylene oxide in the range of from about 10% to about 30% by weight thereof.

22. The method of claim 1 wherein the water soluble biodegradable fluid loss control additive comprises the condensation product of gelatin, formaldehyde, sodium sulfite and acetone in an amount of about 80% by weight thereof and hydroxyethylcellulose having a molar substitution of from about 1.5 moles of ethylene oxide in an amount of about 20% by weight thereof.

23. The method of claim 1 wherein the water soluble biodegradable fluid loss control additive is present in the cement composition in an amount in the range of from about 0.5% to about 2% by weight of cement therein.

24. A cement composition comprising:

a hydraulic cement;

sufficient water to form a slurry; and

a water soluble biodegradable fluid loss control additive comprising a mixture of a condensation product and hydroxyethylcellulose having a molar substitution in the range of from about 1 mole to about 2.5 moles of ethylene oxide.

25. The cement composition of claim 24 wherein the hydraulic cement in the cement composition is selected from the group consisting of Portland cements, slag cements, pozzolana cements, gypsum cements, aluminous cements and silica cements.

26. The cement composition of claim 24 wherein the hydraulic cement in the cement composition is Portland cement.

27. The cement composition of claim 24 wherein the water in the cement composition is selected from the group consisting of fresh water and salt water.

28. The cement composition of claim 24 wherein the water is present in the cement composition in an amount in the range of from about 35% to about 65% by weight of cement therein.

29. The cement composition of claim 24 wherein the condensation product is selected from the group consisting of the condensation product of water, gelatin, formaldehyde, sodium sulfite and acetone; the condensation product of water, casein, formaldehyde, sodium sulfite and acetone; the condensation product of casein, sodium sulfite, acetone, water, formaldehyde and

sodium pyrosulfite; the condensation product of water, soy protein, formaldehyde, sodium sulfite and acetone; the condensation product of water, polyaspartic acid, acetaldehyde, sodium sulfite and pyrocatechol; the condensation product of dimethylsulfide, gelatin, glyoxal, urea and sodium sulfite; and the condensation product of water, polyaspartic acid, formaldehyde, sodium pyrosulfite, melamine and sodium hydroxide.

30. The cement composition of claim 24 wherein the condensation product is the condensation product of water, gelatin, formaldehyde, sodium sulfite and acetone.

31. The cement composition of claim 24 wherein the condensation product comprises 43.17% by weight water, 17.27% by weight gelatin, 25.18% by weight formaldehyde, 7.19% by weight sodium sulfite and 7.19% by weight acetone.

32. The cement composition of claim 24 wherein the condensation product is the condensation product of water, casein, formaldehyde, sodium sulfite and acetone.

33. The cement composition of claim 32 wherein the condensation product comprises 61.05% by weight water, 5.81% by weight casein, 23.26% by weight formaldehyde, 5.08% by weight sodium sulfite and 4.80% by weight acetone.

34. The cement composition of claim 24 wherein the condensation product is the condensation product of casein, sodium sulfite, acetone, water, formaldehyde and sodium pyrosulfite.

35. The cement composition of claim 34 wherein the condensation product comprises 26.90% by weight casein, 7.91% by weight sodium sulfite, 7.91% by weight acetone, 19.77% by weight water, 36.94% by weight formaldehyde and 0.57% by weight sodium pyrosulfite.

36. The cement composition of claim 24 wherein the condensation product is the condensation product of water, soy protein, formaldehyde, sodium sulfite and acetone.

37. The cement composition of claim 36 wherein the condensation product comprises 47.69% by weight water, 7.95% by weight soy protein, 8.27% by weight sodium sulfite, 7.79% by weight acetone, and 28.30% by weight formaldehyde.

38. The cement composition of claim 24 wherein the condensation product is the condensation product of water, polyaspartic acid, acetaldehyde, sodium sulfite and pyrocatechol.

39. The cement composition of claim 38 wherein the condensation product comprises 43.94% by weight water, 6.99% by weight polyaspartic acid, 17.96% by weight acetaldehyde, 34.80% by weight sodium sulfite and 36.00% by weight pyrocatechol.

40. The cement composition of claim 24 wherein the condensation product is the condensation product of dimethylsulfoxide, gelatin, glyoxal, urea, and sodium sulfite.

41. The cement composition of claim 40 wherein the condensation product comprises 57.75% by weight dimethylsulfoxide, 20.88% by weight gelatin, 3.62% by weight glyoxal, 8.61% by weight urea, and 17.40% by weight sodium sulfite.

42. The cement composition of claim 24 wherein the condensation product is the condensation product of water, polyaspartic acid, formaldehyde, sodium pyrosulfite, melamine and sodium hydroxide.

43. The cement composition of claim 42 wherein the condensation product comprises 39.55% by weight water, 9.88% by weight polyaspartic acid, 21.19% by weight formaldehyde, 7.06% by weight sodium pyrosulfite, 8.90% by weight melamine, and 13.42% by weight sodium hydroxide.

44. The cement composition of claim 24 wherein the water soluble biodegradable fluid loss control additive comprises a condensation product in the range of from about 70% to about 90% by weight thereof and hydroxyethylcellulose having a molar substitution in the range of from about 1 mole to about 2.5 moles of ethylene oxide in the range of from about 10% to about 30% by weight thereof.

45. The cement composition of claim 24 wherein the water soluble biodegradable fluid loss control additive comprises the condensation product of gelatin, formaldehyde, sodium sulfite and acetone in an amount of about 80% by weight thereof and hydroxyethylcellulose having a molar substitution of from about 1.5 moles of ethylene oxide in an amount of about 20% by weight thereof.

46. The cement composition of claim 24 wherein the water soluble biodegradable fluid loss control additive is present in the cement composition in an amount in the range of from about 0.5% to about 2% by weight of cement therein.

47. A water soluble biodegradable fluid loss control additive comprising a mixture of a condensation product and hydroxyethylcellulose having a molar substitution in the range of from about 1 mole to about 2.5 moles of ethylene oxide.



48. The additive of claim 47 wherein the condensation product is selected from the group consisting of the condensation product of water, gelatin, formaldehyde, sodium sulfite and acetone; the condensation product of water, casein, formaldehyde, sodium sulfite and acetone; the condensation product of casein, sodium sulfite, acetone, water, formaldehyde and sodium pyrosulfite; the condensation product of water, soy protein, formaldehyde, sodium sulfite and acetone; the condensation product of water, polyaspartic acid, acetaldehyde, sodium sulfite and pyrocatechol; the condensation product of dimethylsulfide, gelatin, glyoxal, urea and sodium sulfite; and the condensation product of water, polyaspartic acid, formaldehyde, sodium pyrosulfite, melamine and sodium hydroxide.

49. The additive of claim 47 wherein the condensation product is the condensation product of water, gelatin, formaldehyde, sodium sulfite and acetone.

50. The additive of claim 47 wherein the condensation product comprises 43.17% by weight water, 17.27% by weight gelatin, 25.18% by weight formaldehyde, 7.19% by weight sodium sulfite and 7.19% by weight acetone.

51. The additive of claim 47 wherein the condensation product is the condensation product of water, casein, formaldehyde, sodium sulfite and acetone.

52. The additive of claim 51 wherein the condensation product comprises 61.05% by weight water, 5.81% by weight casein, 23.26% by weight formaldehyde, 5.08% by weight sodium sulfite and 4.80% by weight acetone.

53. The additive of claim 47 wherein the condensation product is the condensation product of casein, sodium sulfite, acetone, water, formaldehyde and sodium pyrosulfite.

54. The additive of claim 53 wherein the condensation product comprises 26.90% by weight casein, 7.91% by weight sodium sulfite, 7.91% by weight acetone, 19.77% by weight water, 36.94% by weight formaldehyde and 0.57% by weight sodium pyrosulfite.

55. The additive of claim 47 wherein the condensation product is the condensation product of water, soy protein, formaldehyde, sodium sulfite and acetone.

56. The additive of claim 55 wherein the condensation product comprises 47.69% by weight water, 7.95% by weight soy protein, 8.27% by weight sodium sulfite, 7.79% by weight acetone, and 28.30% by weight formaldehyde.

57. The additive of claim 47 wherein the condensation product is the condensation product of water, polyaspartic acid, acetaldehyde, sodium sulfite and pyrocatechol.

58. The additive of claim 57 wherein the condensation product comprises 43.94% by weight water, 6.99% by weight polyaspartic acid, 17.96% by weight acetaldehyde, 34.80% by weight sodium sulfite and 36.00% by weight pyrocatechol.

59. The additive of claim 47 wherein the condensation product is the condensation product of dimethylsulfoxide, gelatin, glyoxal, urea, and sodium sulfite.

60. The additive of claim 59 wherein the condensation product comprises 57.75% by weight dimethylsulfoxide, 20.88% by weight gelatin, 3.62% by weight glyoxal, 8.61% by weight urea, and 17.40% by weight sodium sulfite.

61. The additive of claim 47 wherein the condensation product is the condensation product of water, polyaspartic acid, formaldehyde, sodium pyrosulfite, melamine and sodium hydroxide.

62. The additive of claim 61 wherein the condensation product comprises 39.55% by weight water, 9.88% by weight polyaspartic acid, 21.19% by weight formaldehyde, 7.06% by weight sodium pyrosulfite, 8.90% by weight melamine, and 13.42% by weight sodium hydroxide.

63. The additive of claim 23 wherein the water soluble biodegradable fluid loss control additive comprises a condensation product in the range of from about 70% to about 90% by weight thereof and hydroxyethylcellulose having a molar substitution in the range of from about 1 mole to about 2.5 moles of ethylene oxide in the range of from about 10% to about 30% by weight thereof.

64. The additive of claim 23 wherein the water soluble biodegradable fluid loss control additive comprises the condensation product of gelatin, formaldehyde, sodium sulfite and acetone in an amount of about 80% by weight thereof and hydroxyethylcellulose having a molar substitution of from about 1.5 moles of ethylene oxide in an amount of about 20% by weight thereof.

65. The additive of claim 23 wherein the water soluble biodegradable fluid loss control additive is present in the cement composition in an amount in the range of from about 0.5% to about 2% by weight of cement therein.